Remarks

The application has been carefully reviewed in light of the Non-Final Office Action dated December 3, 2008. Claims 1-21 are pending in the application. Claims 1 and 7 are currently amended. Claims 11-14 were rejected as being anticipated under 35 U.S.C. § 102(b) in view of U.S. Patent No. 6,198,958 (hereafter "*Ives*"). Claims 1-10 and 15-21 were rejected as being obvious under 35 U.S.C. § 103(a) in view of *Ives*. Applicants respectfully request allowance of all the pending claims in view of the subsequent remarks.

Rejections Under 35 U.S.C. § 102

Applicants respectfully traverse the rejections of Claims 11-14 under 35 U.S.C. § 102(b). A proper rejection of a claim under 35 U.S.C. § 102 requires that a single prior art reference disclose each element of the claim. *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983). Moreover, "every element of the claimed invention must be literally present, arranged as in the claim. ... The identical invention must be shown in as complete detail as is contained in the patent claim." *Richardson v. Suzuki Motor Company Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989).

Ives does not teach a system for using transcranial magnetic stimulation (TMS) to enhance cognitive performance in at least one subject, wherein the system comprises means for locating at least one neural circuit which is activated when the subject performs a predetermined task, and wherein the delivery of TMS to the scalp of the at least one subject effectuates a change in the performance of the predetermined task by the subject. *Ives* teaches a system for monitoring a magnetic resonance image (MRI) of a patient during administration of TMS, wherein the timing of the operation of the TMS device is not synchronized with timing of the operation of the MRI system. *Ives*, Abstract, Claim 1. *Ives* describes using the system "to begin magnetic resonance imaging of a patient and then apply TMS pulses and observe the effects of the TMS treatment on the MRI." Column 4, Lines 23-25. Alternatively, *Ives* describes using the system "to apply a TMS treatment and then turn off the TMS device 42 and then observe the

MRI." Column 4, Lines 26-28. As stated in Column 4, Lines 36-50, *Ives* teaches the creation of functional maps of a patient's brain by observing which areas of the patient's brain become active in response to stimulation of a particular area of the brain by TMS. *Ives* also describes using the system to determine the efficacy of treatments on a patient by applying TMS and monitoring the effect of the TMS on the MRI, whereby TMS can be selectively applied until the MRI indicates that the patient's brain is no longer in an undesired state. Column 4, Lines 55-66; Column 5, Lines 1-2.

The Office Action states that *Ives* "is considered to teach all of the structure" of Claims 11-14. Office Action, p. 2. However, the Office Action does not specifically disclose that *Ives* teaches that the system can be used to locate a neural circuit in the brain of the subject that is activated when the subject performs a predetermined task. Likewise, the Office Action does not specifically disclose that *Ives* teaches that TMS can be applied to the selected neural circuit to effectuate a change in the performance of the predetermined task by the subject.

Applicants respectfully submit that *Ives* does not anticipate the system for using TMS described in Claim 11, as amended. Applicants' claim 11 recites a system for using TMS to enhance cognitive performance in at least one subject using: means for locating at least one neural circuit in the subject's brain that is activated when the subject performs a predetermined task; an electromagnetic coil positioned over a spot on the subject's scalp that corresponds to the at least one neural circuit in the brain of the subject; means for delivering TMS from the coil to the spot on the subject's scalp so as to induce current flow in the brain, cause neuronal depolarization in the brain, and effectuate a change in the performance of the predetermined task by the subject. In contrast, *Ives* teaches that MRI can be used to monitor the effects of TMS on a patient, without any reference to the performance of any task by the patient. Thus, *Ives* does not teach the recited limitations in Claim 11 that the system comprises "means for locating at least one neural circuit in the brain of the subject, which is activated *when the subject performs a predetermined task*" and that the application of TMS "effectuate[s] a change in *the performance of the predetermined task by the subject*."

In summary, Applicants respectfully submit that *Ives* fails to anticipate independent Claim 11, and respectfully request that the rejection of this claim be withdrawn. Claims 12-14 depend either directly or indirectly from Claim 11, and thus are similarly not anticipated by *Ives*. Therefore, Applicants respectfully request that the rejections of the claims be withdrawn and that the Examiner allow the pending claims.

Rejections under 35 U.S.C. § 103

Applicants respectfully traverse the rejections of Claims 1-10 and 15-21 under 35 U.S.C. § 103(a). Applicants first submit that, for a *prima facie* case of obviousness, the cited prior art references (when combined) "must teach or suggest all the claim limitations" MPEP § 2143. Thus, if the combination of references does not teach each of the claimed limitations, a finding of obviousness fails. In addition, the Patent Office has the burden under § 103 to establish a *prima facie* case of obviousness, which can be satisfied only by showing some objective teaching in the prior art would lead one to combine the relevant teachings of the references. *See In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). As such, an Applicant, to overcome an allegation of obviousness can show that the cited prior art references (when combined) do not teach or suggest all the claim limitations or that there is not an objective teaching in the prior art that would lead one to combine the relevant teachings of the references.

Second, the Supreme Court has reaffirmed the *Graham* factors for determination of obviousness under 35 U.S.C. 103(a). *KSR Int'l Co. v. Teleflex, Inc.* (*KSR*), No 04-1350 (U.S. Apr. 30, 2007). The four factual inquiries under *Graham* require examination of: (1) the scope and contents of the prior art; (2) the differences between the prior art and the claims in issue; (3) the level of ordinary skill in the pertinent art; and (4) the objective evidence of secondary consideration. *Graham v. John Deere* (*Graham*), 383 U.S. 1, 17-18, 149 USPQ 459, 467 (1966); see also 35 U.S.C. § 103 (2000).

The Court has further recognized that the requirement for a teaching, suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, which was

established by the Court of Customs and Patent Appeals, provides a helpful insight for determining whether the claimed subject matter is obvious under 35 U.S.C. § 103(a). In addition, the Court maintained that any analysis supporting a rejection under 35 U.S.C. § 103(a) should be made explicit, and that it is "important to identify reasons that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed, because "inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *KSR* at 14, 15.

The Office Action states that the method steps of Claims 1-10 and 15-21 "are considered to follow obviously from the normal workings of the Ives device." Office Action, p. 2. In addition, the Office Action states that Column 1 of *Ives* teaches that functional MRI (fMRI) is commonly known. Office Action, p. 2. The Office Action further states that it is known that fMRI can be used to locate the particular area of the brain responsible for performance of a particular function by a subject. Office Action, p. 2. However, there is no teaching or motivation within *Ives* for applying TMS to effectuate changes in the performance of a task by the subject. Applicants request a more specific statement of where and how the *Ives* patent teaches the limitations of the above-cited claims, so as to engage the Patent Office in a meaningful dialogue.

In summary, *Ives* neither anticipates nor renders obvious any of the pending claims. Thus, Applicants respectfully request allowance of all the pending claims in view of the previous remarks. The Examiner is invited and encouraged to contact directly the undersigned if such contact may enhance the efficient prosecution of this application to issue.

A fee of $555.00 for a three month extension of time fee (small entity) is enclosed. The Commissioner is hereby authorized to apply this fee and any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-0629.

Respectfully submitted,

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